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EXAMINER

ARANI, TAGHI T

ART UNIT

PAPER NUMBER

2131

9

DATE MAILED: 05/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/538,517

Applicant(s)

MARUO ET AL.

Examiner

Taghi T. Arani

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on 17 March 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-44 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

Claims 1-44 were pending for examination.

Claims 1, 13, 25 and 34 are amended.

### Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-8, 11-13, 15-16, 18-22, 25-26, 28-31, 33-40, and 43-44 rejected under 35 U.S.C. 103(a) as being unpatentable over prior art of record (Summers et al. and Hendricks et al.)

**Referring to (Amended) claims 1, 13, 25, and 34**, Summers et al. teach a transceiver system for receiving content contained in a secure digital broadcast signal, comprising-

- A first encryption unit coupled to the first component, and for encrypting the data stream for transmission to generate an encrypted data stream [see figure 4, CP1];

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- A second encryption unit coupled to the second component and for decrypting the encrypted data stream received from the first component [see figure 4, CP2];
- A bi-directional digital bus coupled to the first encryption unit and the second encryption unit [see figure 4, BUS 47 and column 3, lines 59-60]; and
- A third component coupled to the bus for arbitration such that content from the data stream is securely transferred across the bus and without exposing an unencrypted data stream [see figure 4, KP 46, see also col. 5, lines 1-13, 30-47], emphasis added reflecting the added limitation.

Summers et al. do not teach a transceiver system for receiving content contained in a secure digital broadcast signal, comprising;

- A first component for generating a data stream;
- A second component for generating a video signal for a display device;

However, Hendricks et al. disclose a transceiver system for receiving content contained in a secure digital broadcast signal, comprising;

- A first component for generating a data stream [see figure 4, DEMOD 606 and column 35, line 41];
- A second component for generating a video signal for a display device [see figure 4, NTSC ENCODE 62.5];

It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply Hendricks et al.'s teachings of a first component for generating a data stream and a second component for generating a video display to the system/method of Summers et al., such that Summers et al.'s system generate a

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data stream to be encrypted and then decrypted at the second component to generate a video signal for display. One of ordinary skill in the art would have been motivated to modify Summers et al.'s system as such in order to enable the generated data stream to be secure at all times and not expose the data in non-encrypted format.

**Referring to claims 2 and 26**, Summers et al. as modified teach the system/method of claims 1 and 25 respectively, wherein the transceiver is a set-top box [see figure 5a of Hendricks et al.].

**Referring to claims 3, 15, 18, 28, and 35**, Summers et al. as modified teach the system/method of claims 1, 13, 25, and 34 respectively, wherein the first component is an audio video decode block for decoding the data stream from a digital broadcast signal [see figure 4, DEMOD 606 and column 35, line 41].

**Referring to claims 4, 16, 29, and 36**, Summers et al. as modified teach the system/method of claims 1, 13, 25, and 34 respectively, wherein the second component is a graphics block for generating the video signal from the data stream received from the first component [see figure 4, NTSC ENCODER 625 of Hendricks et al.].

**Referring to claims 5, 19, 30, and 37**, Summers et al. as modified teach the system/method of claims 1, 13, 25, and 34 respectively, wherein the third component a CPU (central processing unit) block [INFOSEC Controller] coupled to the bus for managing an encryption process of the first encryption unit and the second encryption unit [see column 4, lines 65 - 67].

**Referring to claims 6, 20, 31, and 38,** Summers et al. as modified teach the system/method of claims 5, 19, 30, and 34 respectively, wherein the encryption process is key-based encryption process and the CPU block manages the distribution of keys to the first encryption unit and the second encryption unit [see column 4, lines 65-67 of Summers et al.].

**Referring to claims 7, 21, and 39,** Summers et al. as modified teach the system/method of claims 5, 19, and 34 respectively, further comprising an arbiter coupled to the CPU block for arbitration of the bus [see figure 4, SECURE BUS ARBITER 40 of Summers et al.].

**Referring to claims 11 and 43,** Summers et al. as modified teach the system/method of claims 1 and 34 respectively, further comprising a front end block coupled to the bus for receiving the digital broadcast signal and generating the data stream therefrom, the first component coupled to receive the data stream from the front end block via the bus [see figure 4, TUNER 603 of Hendricks et al.].

**Referring to claims 12, 33, and 44,** Summers et al. as modified teach the system/method of claims 1, 25, and 34 respectively, wherein the data stream is substantially compliant with a version of the MPEG (Moving Pictures Experts Group) format [see column 8, line 24].

Claims 8, 22, and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Summers et al. and Hendricks et al., and further in view of Computer Architecture and Organization to John P. Hayes.

**Referring to claims 8, 22, and 40,** Summers et al. as modified teach all limitations of the claims except do not explicitly recite the system/method of claims 1, 19, and 34

respectively, wherein the first component, second component, and third component include respective identification registers for identifying each component. Nonetheless, it is inherent in computer architecture, like that taught by Summers et al. and Hendricks et al., that each component have a register to allow for the CPU to identify the present state of the component.

However, the examiner herein addresses the possibility that the claimed register architecture is not inherent in Summers et al. as modified. So, for argument's sake, Summers et al. as modified is silent as to the provision of registers in the first, second, and third components.

Hayes does disclose the system/method of claims 1, 19, and 34 respectively, wherein the first component, second component, and third component include respective identification registers for identifying each component [see page 139, Circuit specification, second paragraph],

Hence, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply Hayes' teachings such that each component of Summers et al. and Hendricks et al.'s system have a register therein. One of ordinary skill in the art would have been motivated to modify Summers et al. and Hendricks et al.'s system as such in order to allow for the CPU to identify the present state of the component.

**Claims 9-10, 14, 23-24, 27, 32, and 41-42** are rejected under 35 U.S.C. 103(a) as being unpatentable over Summers et al. and Hendricks et al., and further in view of U.S. Patent No. 5,805,706 to Davis (prior art of record).

Referring to claims 9, 23, 32, and 41, Summers et al. and Hendricks et al. do not explicitly teach the system/method of claims 1, 19, 25, and 34 respectively, wherein said data stream is encrypted using an encryption process substantially compliant with DES ECB (Data Encryption Standard Electronic Code Book).

However, Davis does disclose the system/method of claims 1, 19, 25, and 34 respectively, wherein said data stream is encrypted using an encryption process substantially compliant with DES EC13 (Data Encryption Standard Electronic Code Book) [see column 3, line 16].

It would have been obvious to one of ordinary skill in the art at the time the inventions was made to apply Davis' teachings of a DES compliant encryption process, such that the encryption units of Summers et al. and Hendricks et al. perform DES encryption. One of ordinary skill in the art would have been motivated to modify Summers et al and Hendricks et al.'s system as such in order to make it compliant with industry standards and thus easing the integration of the subsystem into other systems.

**Referring to claims 10, 24, 27 and 42**, Summers et al. and Hendricks et al. do not teach the system/method of claims 1, 19, 25, and 34 respectively, wherein the bus is a PCI (Peripheral Component Interconnect) compliant bus and each encryption unit performs encryption and decryption.

However, Davis does disclose the system/method of claims 1, 19, 25, and 34 respectively, wherein the bus is a PCI (Peripheral Component Interconnect) compliant bus and each encryption unit performs encryption and decryption [see column 3, line 36 and column 4, lines 57-58].



It would have been obvious to one of ordinary skill in the art at the time the inventions was made to apply Davis' teachings of a PCI bus and each encryption unit performing encryption and decryption, such that the encryption units of Summers et al. and Hendricks et al. perform encryption and decryption. One of ordinary skill in the art would have been motivated to modify Summers et al and Hendricks et al.'s system as such to enable the cryptographic unit to decrypt or encrypt data that is sent and received via the PCI bus (bi-directional).

**Referring to claim 14**, Summers et al. and Hendricks et al. do not teach the architecture of claim 13 wherein the first component and the first encryption unit are built into a first integrated circuit device and the second component and the second encryption unit are built into a second integrated circuit device.

However, Davis does disclose the architecture of claim 13 wherein the first component and the first encryption unit are built into a first integrated circuit device and the second component and the second encryption unit are built into a second integrated circuit device [see column 4, lines 19-24].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply Davis' teachings such that the encryption unit and first and second components of Summers et al. and Hendricks et al. are built into integrated circuit devices. One of ordinary skill in the art would have been motivated to modify Summers et al. and Hendricks et al.'s system as such in order to add an extra level of secure for the plain text or key information.

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**Claim 17** is rejected under 35 U.S.C. 103(a) as being unpatentable over Summers et al. and Hendricks et al., and further in view of U.S. Patent No. 5,872,846 to Ichikawa (prior art of record).

Referring to claim 17, Summers et al. and Hendricks et al. do not teach the architecture of claim 13 wherein the first component is a conditional access block for descrambling the digital broadcast signal.

However, Ichikawa does disclose the architecture of claim 13 wherein the first component is a conditional access block for descrambling the digital broadcast signal [see figure 3, First-Level Decoder 332, Key 3081.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply Ichikawa's teachings of a conditional access block such that the first component of Summers et al. and Hendricks et al. is a conditional access block. One of ordinary skill in the art would have been motivated to modify Summers et al. and Hendricks et al.'s system as such in order to allow only the authorized subscriber to obtain the program.

#### **Response to Amendment**

Applicant's arguments filed 3/17/2004 regarding the rejection of the claims under 35 U.S.C. 103() have been fully considered but they are not persuasive. Applicant's attempt to distinguish the claims from prior art is based on noting the lack of a teaching of "the generation of data stream, the encryption of data stream, and the secure transfer of the data stream across a bus and among components and without exposing an unencrypted data stream", page 15 third paragraph of the Applicant's REMARKS. This feature was found to

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be taught by Summers SBA. That is, the SBA of Summers' invention works under the control of a trusted kernel and operating system which prevents other untrusted processors or devices from compromising classified or sensitive data, col. 5, lines 30-47 and that Summers' invention provides isolation of the data over the bus from all other computer elements not associated with the data class throughout its processing and transfer through the system, col. 5, lines 7-13.

The Applicant argues that "Summers do not appear to show any special mechanism or procedures for preventing exposure of an unencrypted data stream", page 16, third paragraph of the REMARKS.

The Examiner disagrees. In fact, Summers' apparatus is provided to handle classes of data in computer systems that must not be permitted to intermingle due to their security classifications and critically of their data contents and that Summers' SBA with a controller provide a way to isolate data without modification of the computer back plane, see abstract.

Furthermore, Summer discloses that arbiter function control in the motherboard determines what cards are allowed access to the computer data bus to perform secret, classified or non-secret sensitive data handling, col. 1, lines 37-44.

***Action is Final***

**THIS ACTION IS FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until

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after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

***Conclusion***


Any inquiry concerning this communication or earlier communications from examiner should be directed to Taghi Arani, whose telephone number is (703) 305-4274. The examiner can normally be reached Monday through Friday from 8:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz Sheikh, can be reached at (703) 305-9648. The Fax numbers for the organization where this application is assigned is:

(703) 872-9306

Taghi Arani

Patent Examiner

  
AYAZ SHEIKH  
SUPERVISORY PATENT EXAMINER  
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